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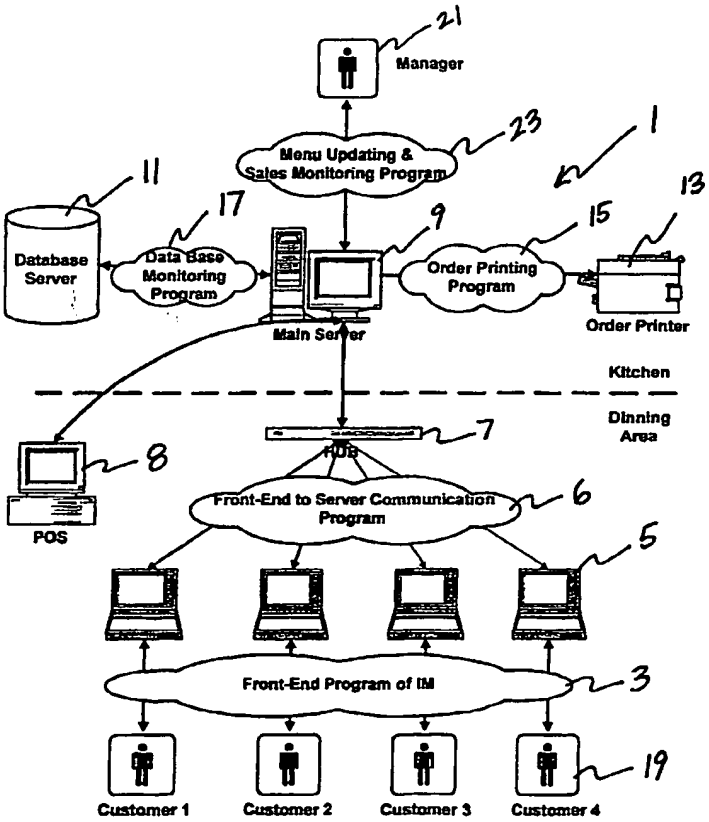
(54) Title: INTERACTIVE MENU SYSTEM FOR RESTAURANTS



(57) Abstract: An interactive menu system allows restaurant customers to order food items without requiring a waiter or waitress. A terminal with screen display is provided a dining table. Through a graphic user interface, at list of food items are displayed on the screen display. The customer selects the desired food items via a touch screen. When all of the desired food items are selected, the order is confirmed. The order is then sent electronically to a terminal located in the kitchen area where the order is printed out from a printer. The kitchen personnel prepare the food per the printed order.

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INTERACTIVE MENU SYSTEM FOR RESTAURANTS

FIELD OF THE INVENTION

The present invention relates generally to the field of restaurant equipment, and in particular, to an interactive menu which allows restaurant customers to make selection of menu items such as food and beverage without the assistance of a waiter or waitress.

BACKGROUND OF THE INVENTION

In a typical sit-down restaurant, the process of ordering food and beverage involves reading of the menu, waiting for a waiter or waitress (hereinafter simply "waiter") to take the order, making the order, and then waiting for the food to be served. If additional order needs to be made, the customer must flag down the waiter once again to make the request. With this type of ordering scheme, i.e. using a waiter, the customer must be ready to order when the waiter arrives. If the customer is not ready, he may be rushed into making the order where the best selection may not be made. In other instances, the customer may be ready, but the waiter may not be available perhaps because the waiter may be serving other customers, or the waiter may be difficult to flag down simply because the waiter is unaware that his attention is requested. Hence, it can be seen that the use of waiter for ordering menu items can be a cumbersome process for the customer.

In addition, the use of the waiters to take orders also has disadvantages for a restaurant as well. For one, the restaurant needs to hire additional waiters to accommodate all of the customers. Since wage has to be paid out, hiring waiters can be costly for the restaurant. But if too few waiters are hired, some of the customers may need to wait excessive amount of time, which can cause customer dissatisfaction with the restaurant. In addition to cost for wages, hiring waiters to take orders requires training so that the waiter can answer any questions the customers may have about the restaurant's menu items. Given the relatively high turnover rate for waiters, it is often not economical to provide extensive training where the waiter is fully knowledgeable about every item on the menu.

Although there currently exist electronic restaurant ordering devices to help waiters to take orders for the customers, these devices do not address the problems stated above because they still require the waiters to take the order. While it may be argued that the order entry process is somewhat expedited, it does not complete eliminate the need to have the waiter to take the order from the customers. Therefore, what is necessary is an interactive menu which allows the customer to order menu items without the assistance of a waiter.

OBJECT OF THE INVENTION

It is therefore an object of the present invention to provide an interactive menu system which addresses the shortcomings of the prior art systems described above.

SUMMARY OF THE INVENTION

The present interactive menu system 1 (IMS) includes a plurality of terminals which are placed at each of the designated tables at a restaurant. The terminals have an electronic display which displays the menu. A front-end program, through a graphic user interface, allows the customers to place the order via an appropriate input device. In the preferred embodiment, the input device is a touch screen, though other input devices such as a mouse or keypad are clearly possible.

The terminals are connected to a hub which is in turn connected to a server. A generic front-end-to-server communication program provides the proper interface between the terminals and the main server. Connected to the server is a database server which contains the data such as the list of the menu items and their prices. A database monitoring program interfaces the database server with the main server and allows monitoring capability of the data in the database server . Also connected to the main server is an order printer for printing out the orders. The order printing program provides the proper interface between the main server and the order printer. A manager or other authorized personnel may update the menu and take care of other administrative functions through the menu updating and sales monitoring program. A PC-based cash register may be coupled to the main server at the point of sale (POS).

There are several screen which are displayed on the interactive menu. The first screen seen by the customer is the main menu. In the middle portion of the main screen is the name and logo of the restaurant.

On the top of the main screen is a display of a greeting and simple instruction how to use the interactive menu. On the left side is a list of the food categories. Of course, how the foods are categorized depends on the type of the restaurant, and how the management wishes to package the menu items. At the bottom right portion is a space for advertisements. At the bottom left portion, there are three buttons: Call For Help, Call For Bill, and Choose All Categories , which are all self explanatory.

When a customer selects a food category a list of food items under the category and their respective prices are shown on the left portion. In the middle portion , a picture of all or some of the food items on the list is shown. On the top portion, instruction is given to select the food under the category chosen.

When a customer selects a food item, a picture of the chosen food item is shown in the middle portion of the screen. Next to the picture is a brief description of the food item. At the top portion, an instruction is shown requesting the customer to choose the desired quantity through the quantity buttons. The quantity buttons are shown below the picture.

When the customer has chosen the quantity, in this case one order, the selected food item, quantity ordered, and the total price for that food item are shown in the mini-screen adjacent to the quantity buttons. At this point, the customer can choose to confirm the order by pressing the "Confirm" button, delete the order by pressing the "Delete" button, or continue to order further food items. The instruction is shown in the top portion.

When a customer has pressed the confirm button, the order is sent to the main server and is printed by the printer. The chef then takes the printout and prepares the meal per the order.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates the schematic diagram of the preferred embodiment of the present menu system.

FIGS. 2 through 6 illustrate the various graphic user interface screens which are displayed on the terminal display.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 illustrates the preferred embodiment of the present interactive menu system 1 (IMS). The IMS 1 includes a plurality of terminals 5 which are placed at each of the designated tables at a restaurant. The terminals 5 have an electronic display which displays the menu. A front-end program 3, through a graphic user interface, allows the customers 19 to place the order via an appropriate input device. In the preferred embodiment, the input device is a touch screen, though other input devices such as a mouse or keypad are clearly possible.

The terminals 5 are connected to a hub 7 which is in turn connected to a server 9. A generic front-end-to-server communication program 6 provides the proper interface between the terminals 5 and the main server 9. Connected to the server 9 is a database server 11 which contains the

data such as the list of the menu items and their prices. A database monitoring program 17 interfaces the database server 11 with the main server 9 and allows monitoring capability of the data in the database server 11. Also connected to the main server 9 is an order printer 13 for printing out the orders. The order printing program 15 provides the proper interface between the main server 9 and the order printer 13. A manager 21 or other authorized personnel may update the menu and take care of other administrative functions through the menu updating and sales monitoring program 23. A PC-based cash register may be coupled to the main server 9 at the point of sale (POS).

It should be understood by those skilled in the art that the above implementation described, while preferred, is not the only way to implement the present invention. For instance, for some embodiments, a separate database server 11 may not be necessary and may be replaced with other memory devices. Also, the printer 13 may not be necessary where only a screen display is sufficient. in addition, although here the main server 9 was located in the kitchen, it may be located elsewhere so long as the kitchen personnel are able to receive the order sent by the customer. Hence, the implementation shown in FIG. 1 illustrative only and should not limit the present invention only to that shown.

FIGS. 2 through 6 illustrate the graphic user interface for the customer to interface with the IMS 1. FIG. 2 illustrates the main screen 30 which the customer initially sees on the terminal 5 display when he or she first sits down at a designated table. Referring to FIG. 2, in the middle portion 37 of the main screen 30 is the name and logo of the restaurant. On the top 33 of the main screen 30 is a display of a greeting and simple

instruction how to use the interactive menu. On the left side 35 is a list of the food categories. Of course, how the foods are categorized depends on the type of the restaurant, and how the management wishes to package the menu items. At the bottom right portion 39 is a space for advertisements. At the bottom left portion, there are three buttons: Call For Help 41, Call For Bill 43, and Choose All Categories 45, which are all self explanatory.

Now referring to FIG. 3, when a customer 19 selects a food category, in this case "Chef Recommendation", a list of food items under the category and their respective prices are shown on the left portion 35. In the middle portion 37, a picture of all or some of the food items on the list is shown. On the top portion 33, instruction is given to select the food under the category chosen.

Now referring to FIG. 4, when a customer 19 selects a food item, in this case Shake Sashimi, in the chosen category, a picture 49 of the chosen food item is shown in the middle portion 47 of the screen. Next to the picture 47 is a brief description 51 of the food item. At the top portion 33, an instruction is shown requesting the customer 19 to choose the desired quantity through the quantity buttons 53. The quantity buttons are shown below the picture 49.

Now referring to FIG. 5, when the customer 19 has chosen the quantity, in this case one order, the selected food item, quantity ordered, and the total price for that food item are shown in the mini-screen 55 adjacent to the quantity buttons 53. At this point, the customer can choose to confirm the order by pressing the "Confirm" button 57, delete the order

by pressing the "Delete" button 59, or continue to order further food items. The instruction is shown in the top portion 33.

Now referring to FIG. 6, the screen now shows a situation where the customer 19 has chosen to select additional food items. As can be seen in the mini-screen 55, all of the selected food items, the quantity ordered, and the total for each of the food items are shown. Again, the customer may continue to order, confirm the order, or delete any of the listed items.

Now referring back to the FIG. 1, when a customer has pressed the confirm button, the order is sent to the main server 9 and is printed by the printer 13. The chef then takes the printout and prepares the meal per the order.

The present interactive menu system offers enormous benefits to the restaurant owner. For one, it reduces the number of waiters and waitresses. It also increases customer satisfaction as he customer does not need to wait for a waiter or waitress to make the order. Moreover, the restaurant owner can place advertisements on the screens. In addition, after the order has been confirmed, the owner may choose to place soothing pictures on the terminal screen or allow video games to be played. The latter option is beneficial to customers with small children who may be disruptive to the parents or other customers if they are not pre-occupied with something of their interest. With such embodiments (where video games are allowed), the terminal should be strategically placed such that the children can easily access both the screen and the controls without unduly hindering the eating enjoyment of the other people at the table or the adjacent tables. One option is to place the terminal screen below the

dining table with a translucent top. Such an arrangement is also conducive in minimizing the space requirement.

The present invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The presently disclosed embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims and all changes which come within the meaning and range of equivalency of the claims are, therefore, to be embraced therein.

CLAIMS

We Claim:

1. An interactive menu system for a restaurant having a dining area where a customer can consume food items and a kitchen where food items are prepared, said system comprising:

a terminal with electronic display located in the dining area,

an input device connected to said terminal;

a processor and memory connected to said terminal;

a user interface displayed on said electronic display, said user interface providing a choice of menu items which can be selected by the customer using said input device; and

an output device located in the kitchen, said output device displaying the menu items selected by the customer.

2. The interactive menu system as recited in claim 1 wherein said user interface is a graphic user interface.

3. The interactive menu system as recited in claim 1 wherein said input device is a touch screen.

4. The interactive menu system as recited in claim 1 wherein said input device is a mouse.

5. The interactive menu system as recited in claim 1 wherein said output device is printer.

6. The interactive menu system as recited in claim 1 wherein said output device is a monitor.

7. The interactive menu system as recited in claim 2 wherein said graphic user interface includes a list of food category, quantity selection buttons, a mini-screen displaying ordered food items, and instructions.

8. The interactive menu system as recited in claim 7 wherein when a food item is selected, a picture of said food item appears on said graphic user interface.

9. The interactive menu system as recited in claim 7 wherein said graphic user interface includes a delete button for deleting a selected food item before said food item is confirmed.

10. The interactive menu system as recited in claim 7 wherein video games are provided at the terminal.

11. The interactive menu system as recited in claim 1 wherein said terminal is located under a dining table with a translucent top such that said display can be seen through said translucent top.

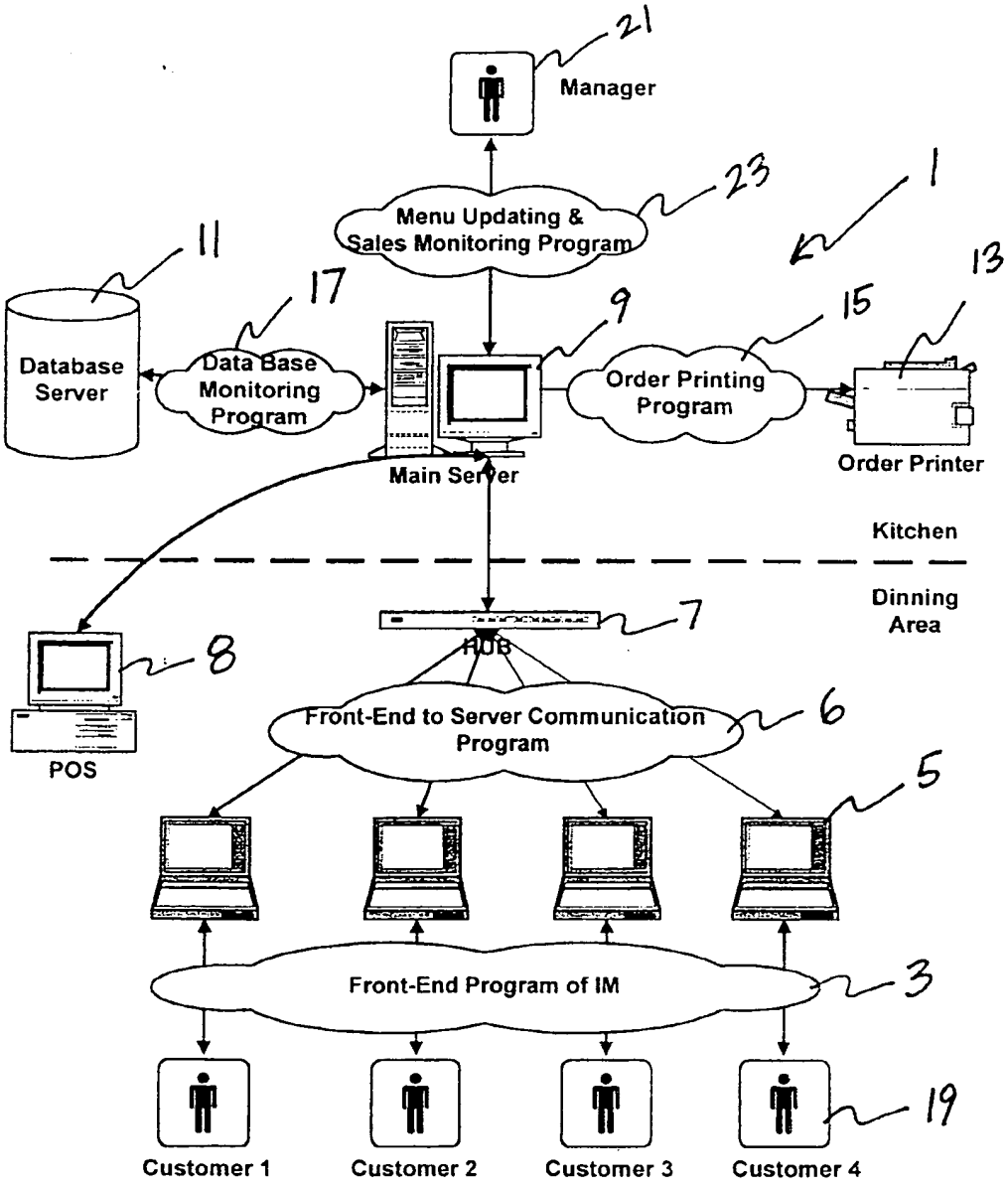
21
Manager
23
Menu Updating & Sales Monitoring Program
1
11
17
9
15
13
Database Server
Data Base Monitoring Program
Order Printing Program
Order Printer
Main Server
Kitchen
Dinning Area
7
HUB
8
POS
Front-End to Server Communication Program
6
5
Front-End Program of IM
3
19
Customer 1
Customer 2
Customer 3
Customer 4

FIG. 1

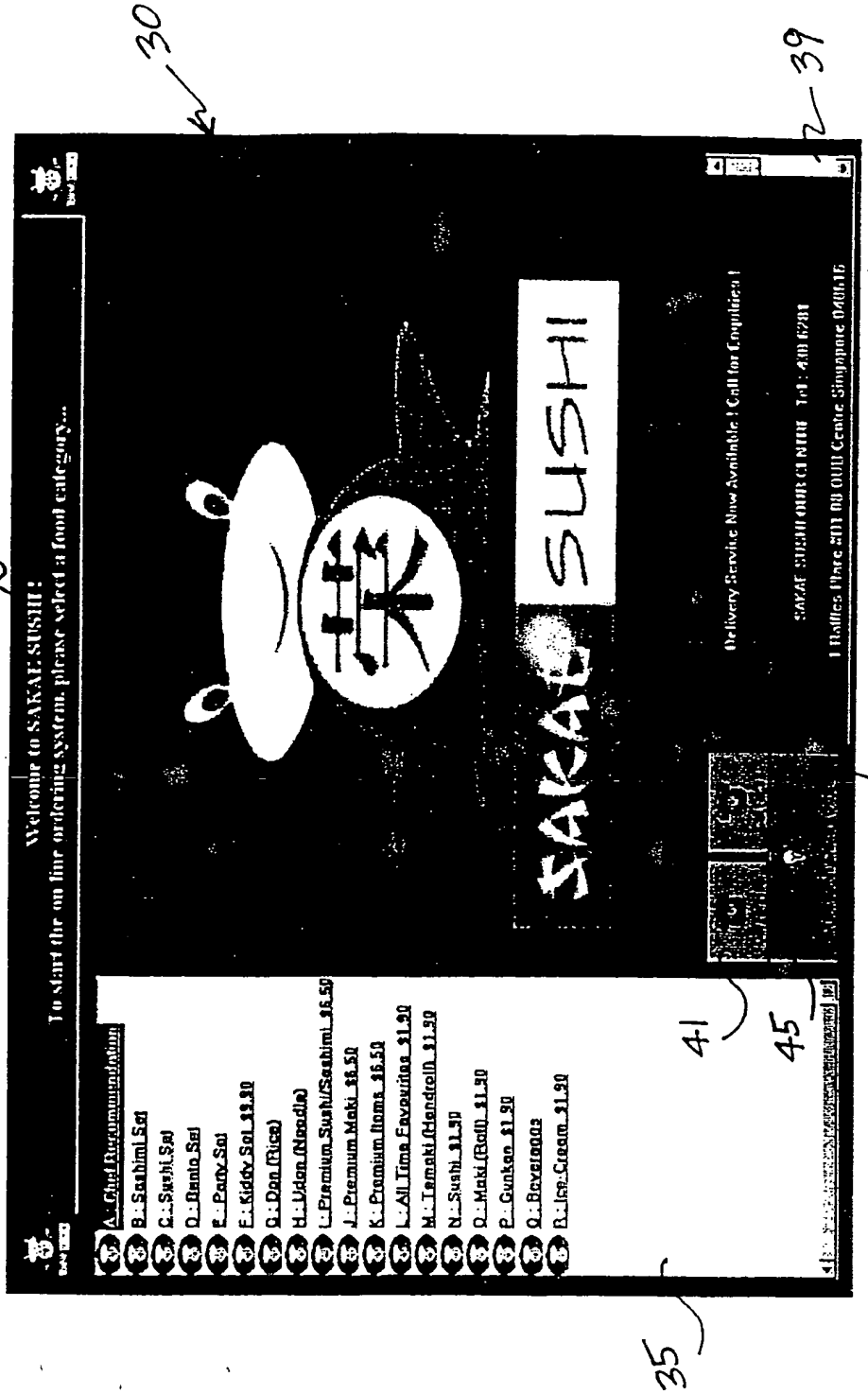
30
33
39
43
41
45
35
Welcome to SAKAE SUSHI !
To start the on line ordering system, please select a food category...
A : Chef Recommendation
B : Sashimi Set
C : Sushi Set
D : Bento Set
E : Party Set
F : Kiddy Set 19.80
G : Don (Rice)
H : Udon (Noodle)
I : Premium Sushi/Sashimi 26.50
J : Premium Maki 18.50
K : Premium Items 16.50
L : All Time Favourites 11.90
M : Temaki (Handroll) 11.90
N : Sushi 11.50
O : Maki (Roll) 11.90
P : Gunkan 11.90
Q : Beverages
R : Ice Cream 11.90
SAKAE SUSHI
Delivery Service Now Available ! Call for Enquiries !

FIG. 2

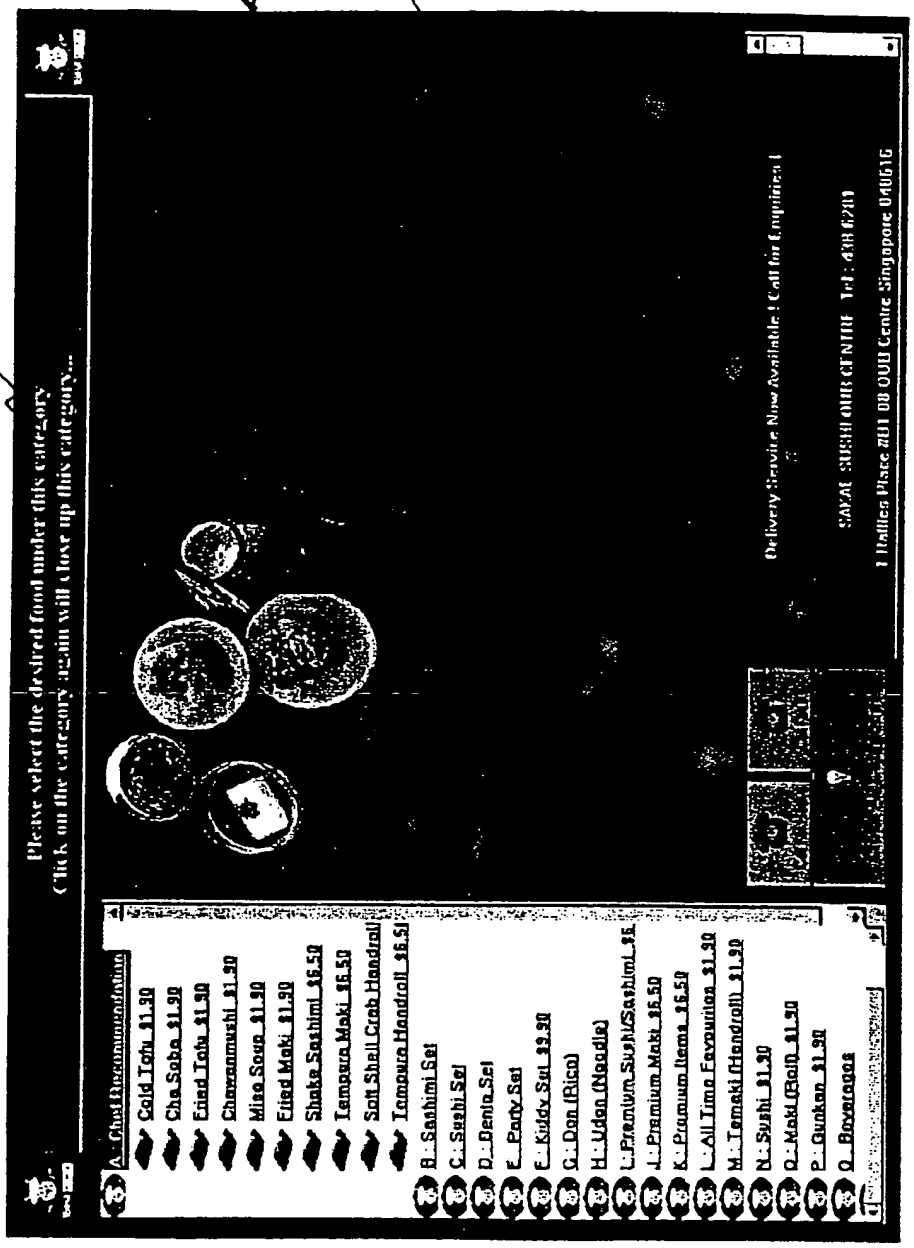
33
47
37
Please select the desired food under this category
Click on the category again will close up this category...
A - Chef Recommendation
Cold Tofu $1.90
Cha Soba $1.90
Fried Tofu $1.90
Chawanmushi $1.90
Miso Soup $1.90
Fried Maki $1.80
Shake Sashimi $6.50
Tempura Maki $6.50
Soft Shell Crab Handroll
Tempura Handroll $6.5
B - Sashimi Set
C - Sushi Set
D - Bento Set
E - Party Set
F - Kiddy Set $3.50
G - Don (Rice)
H - Udon (Noodle)
I - Premium Sushi/Sashimi $6
J - Premium Maki $6.50
K - Premium Items $6.50
L - All Time Favourites $1.90
M - Temaki (Handroll) $1.90
N - Sushi $1.90
O - Maki (Roll) $1.50
P - Oshkon $1.90
Q - Beverages
Delivery Service Now Available ! Call for Enquiries !
1 Hullett Place #01-08 OUE Centre Singapore 048616

FIG. 3

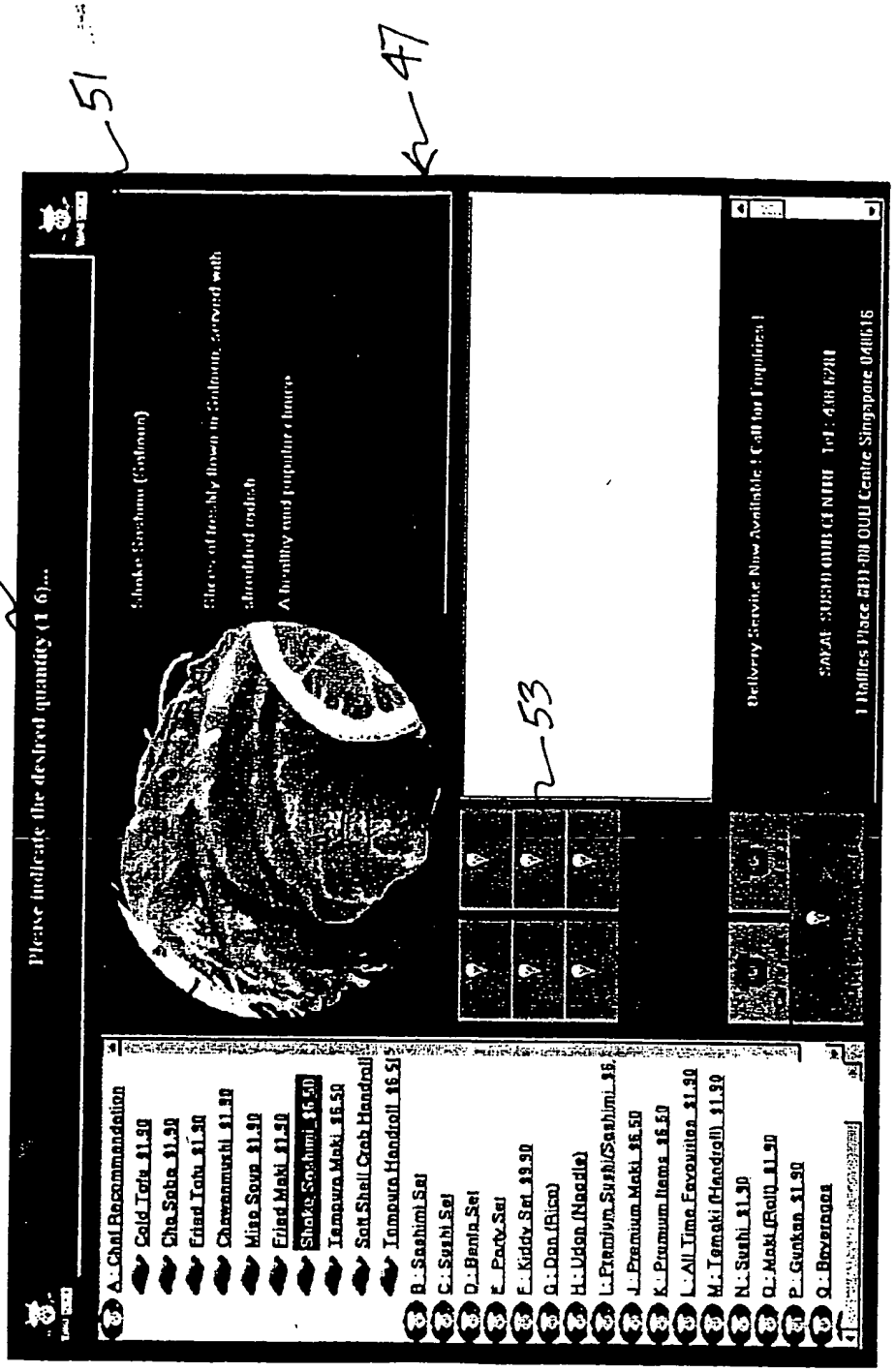
33
51
47
53
Please indicate the desired quantity (1-6)...
A : Chef Recommendation
Cold Tofu $1.30
Cha Soba $1.30
Fried Tofu $1.30
Chawanmushi $1.30
Miso Soup $1.30
Fried Maki $1.50
Shake Sashimi $6.50
Tempura Maki $6.50
Salt Shell Crab Handroll
Tempura Handroll $6.50
B : Sashimi Set
C : Sushi Set
D : Bento Set
E : Party Set
F : Kiddy Set $9.90
G : Don (Rice)
H : Udon (Noodle)
I : Premium Sushi/Sashimi
J : Premium Maki $6.50
K : Premium Items $6.50
L : All Time Favourites $1.90
M : Temaki (Handroll) $1.90
N : Sushi $1.50
O : Maki (Roll) $1.90
P : Gunkan $1.90
Q : Beverages
Delivery Service Now Available ! Call for Enquiries !
1 Raffles Place #01-08 OUB Centre Singapore 048616

FIG. 4

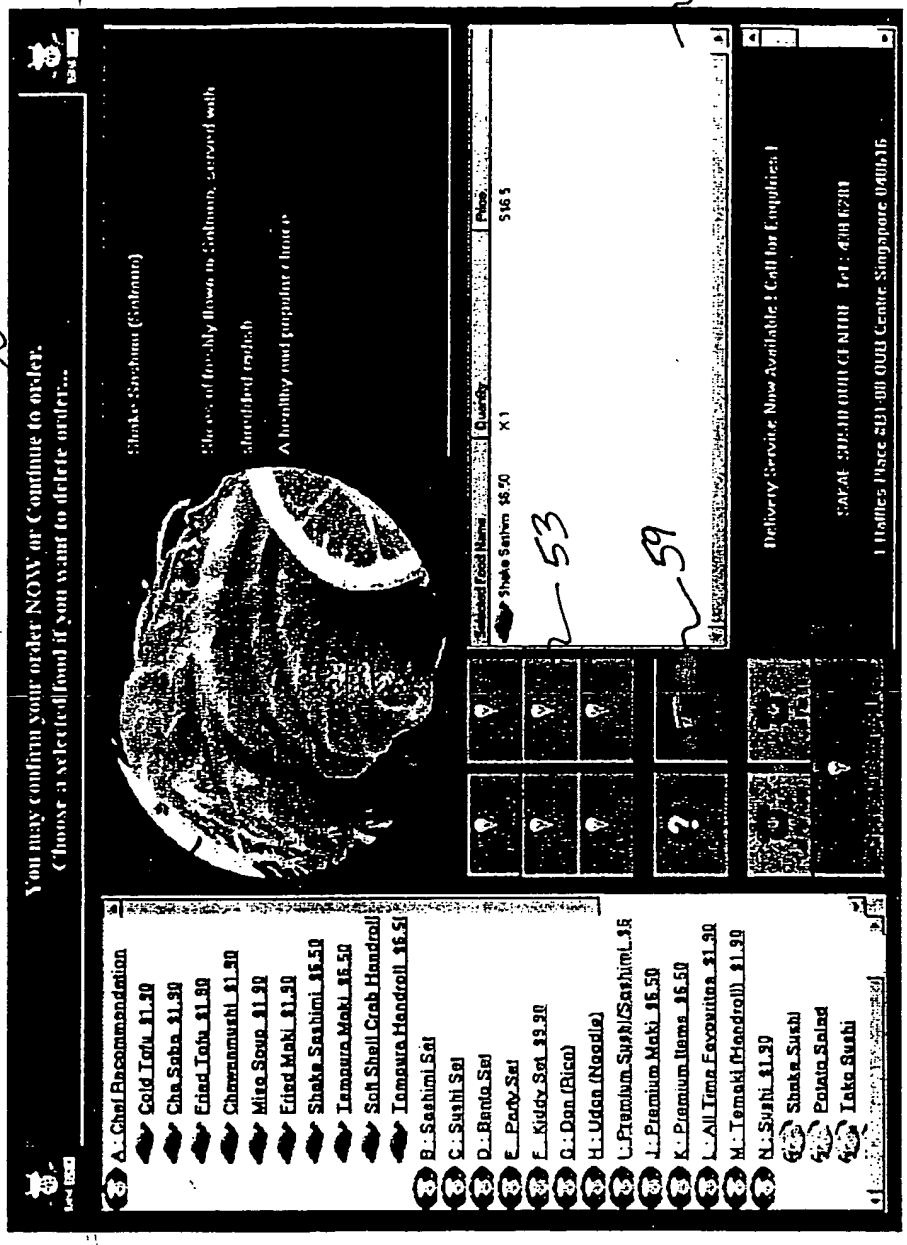
51
55
53
59
You may confirm your order NOW or Continue to order.
Choose a selected food if you want to delete order...
A: Chef Recommendation
Cold Tofu $1.30
Cha Soba $1.30
Fried Tofu $1.30
Chawanmushi $1.30
Miso Soup $1.30
Fried Maki $1.30
Shake Sashimi $6.50
Tamago Maki $6.50
Soft Shell Crab Handroll
Tamago Handroll $6.50
B: Sashimi Set
C: Sushi Set
D: Bento Set
E: Party Set
F: Kiddy Set $9.90
G: Don (Rice)
H: Udon (Noodle)
I: Premium Sushi/Sashimi $15
J: Premium Maki $6.50
K: Premium Items $6.50
L: All Time Favourites $1.90
M: Temaki (Handroll) $1.30
N: Sushi $1.30
Shake Sushi
Potato Salad
Take Sushi
Shake Sashimi (Salmon)
Shake of freshly flown in Salmon, served with
shredded radish
A healthy and popular choice
Selected Food Items
Quantity
Price
Shake Sashimi $6.50
X1
$6.5
Delivery Service Now Available ! Call for Enquiries !

FIG. 5

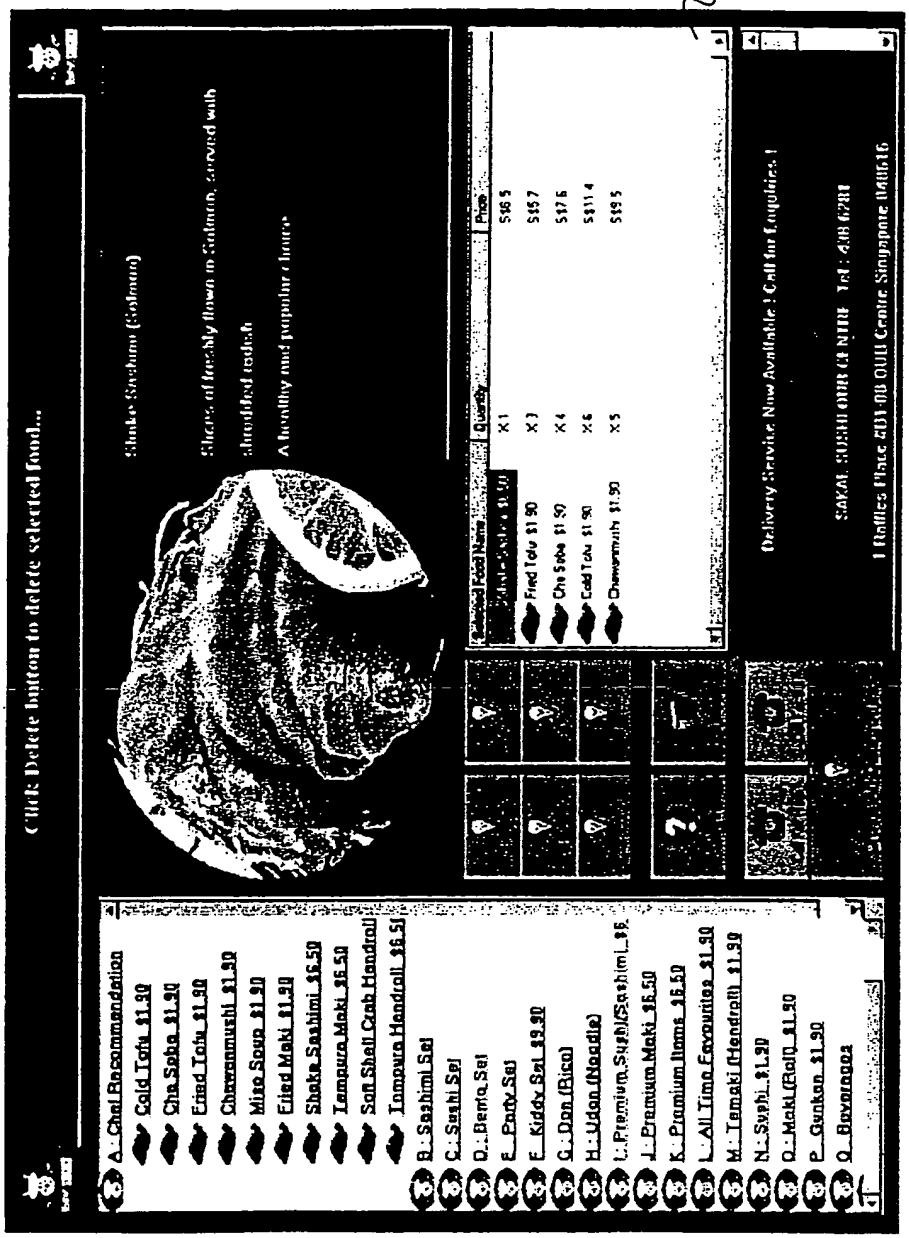
Click Delete button to delete selected food...
A_Chef Recommendation
Cold Tofu $1.90
Cha Soba $1.90
Fried Tofu $1.90
Chawanmushi $1.90
Miso Soup $1.90
Fried Maki $1.90
Shake Sashimi $5.50
Tempura Maki $5.50
Soft Shell Crab Handroll
Tempura Handroll $5.50
B_Sashimi Set
C_Sushi Set
D_Bento Set
E_Party Set
F_Kiddy Set $3.90
G_Don (Rice)
H_Udon (Noodle)
I_Premium_Sushi/Sashimi_$5.
J_Premium Maki $5.50
K_Premium Items $5.50
L_All Time Favourites $1.90
M_Temaki (Handroll) $1.90
N_Sushi $1.90
O_Maki (Roll) $1.90
P_Gunkan $1.90
Q_Beverages
Shake Sashimi (Salmon)
Slices of freshly flown in Salmon, served with shredded radish
A healthy and popular choice
Fried Tofu $1.90
Cha Soba $1.90
Cold Tofu $1.90
Donmushi $1.90
Price
$5.5
$1.9
$1.9
$1.9
$5.5
Delivery Service Now Available ! Call for Enquiries !
1 Raffles Place #01-08 OUB Centre Singapore 0481516

FIG. 6